

# **TOBACCO-RELATED BEHAVIOR AND ATTITUDES**

## **EXECUTIVE SUMMARY**

# **Suffolk County New York**

Center for Survey Research

State University of New York at Stony Brook

A Report Prepared for the Suffolk County Department of Health Services  
Tobacco Control Unit

July, 2001

**Tobacco-Related Behavior and Attitudes  
in Suffolk County, New York**

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## **Executive Summary**

- The prevalence of smoking in Suffolk County is 20.8% and, based on the number of individuals screened in this study for smoking behavior (N=2463), there is a 95% chance that the true prevalence of smoking in Suffolk county is between 19.2% and 22.4%. This is statistically lower than the national average of 24.1%.
- The prevalence of smoking declines with age. There is no gender difference overall in the prevalence of smoking among Suffolk County residents. But there is a significant gender difference among the youngest age group. Young women aged between 18 and 25 are the most likely to smoke of any age and gender grouping with 37% reporting that they smoke regularly. This is almost double the prevalence of smoking among men in the same age group (17%).
- Individuals who had at least one parent who smoked are more likely to smoke now (24%) than individuals whose parents never smoked (14%).
- A majority of smokers smoke daily (69%) although a minority do not smoke every day (31%). Occasional smokers smoke many fewer cigarettes on days when they do smoke than do daily smokers, averaging between 2 and 3 cigarettes compared to almost a pack a day among daily smokers. Occasional smokers are also more serious about quitting; 74% had stopped smoking for at least 24 hours in an attempt to quit in the last 12 months compared to 55% of daily smokers.
- Smokers with children living at home under the age of 18 are generally optimistic about the impact of their smoking on their children; 66% say their children will be just as likely or somewhat less likely to smoke than the children of non-smokers.
- Over three-quarters (82%) of all smokers said they plan to quit at some point in the future; 40% plan to quit in the next 6 months or sooner. Moreover, in the last 12 months 57% of smokers had stopped smoking for at least 24 hours in an attempt to quit. Black smokers and those with children under 18 living at home were most likely to have tried to quit in the last 12 months.
- One of the major impediments to quitting is a lack of systematic assistance. The majority of smokers who tried to quit in the last 12 months did so on their own without any chemical or therapeutic assistance (78%).
- Health professionals have widespread access to smokers – 85% of smokers had seen a health professional in the last 12 months. But only a bare majority of smokers who had seen a health professional were advised to quit (55%) and very few received any concrete information about a smoking cessation program (15%).
- The majority of smokers (65%) could not name or describe a specific smoking cessation program; 17% had heard of Suffolk county's program, "Learn to be Tobacco Free", and 23% could name another smoking cessation program.

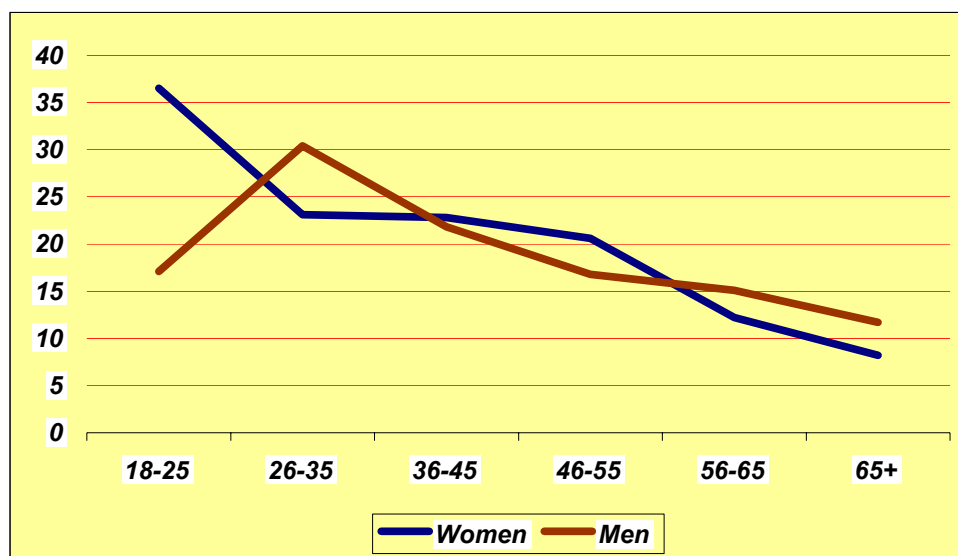
- Among married smokers, 46% also have a partner who smokes. And the incidence of smoking inside the house is greatest among smoking couples with 68% reporting that someone had smoked inside their home in the last 30 days compared to 46% of smokers married to a non-smoker.
- The presence of children under 18 living at home depresses the incidence of smoking at home slightly. 60% of smokers without children smoke at home compared to 52% of those with children under 18.
- Working Suffolk county residents report widespread restrictive smoking policies in the workplace. Only 20% of workers report that someone had smoked in their work area in the last two weeks. A majority of workers who were aware of a smoking policy in their workplace said that smoking is prohibited indoors (78%) and 9% report that is allowed in some indoor areas.
- Suffolk county residents are well informed about the consequences of second-hand smoke. 71% of all residents correctly know that second-hand smoke can be harmful to adults, babies and children, an unborn fetus, and know that it could cause lung cancer. Men were less aware of the effects of second-hand smoke than were women; smokers were less aware of its effects than were non-smokers; older people were less aware of its effects than were younger people.
- Suffolk county residents express widespread support for government policies designed to reduce second-hand smoke, restrict children's access to tobacco products, increase taxes on cigarettes, and support the use of tobacco settlement money for anti-smoking advertisements. In general, smokers are less supportive than non-smokers of these policies.
- A majority of local residents oppose cigarette advertising and support government-funded anti-smoking advertisements.
- Suffolk county residents' responses regarding the health effects of smoking reflect a knowledge of only generalized information. Smokers hold mixed views on the safety of different kinds of cigarettes. Among smokers, 61% think that low tar cigarettes are NOT safer than regular cigarettes, 67% think that menthol cigarettes are NOT safer, 40% think that filtered cigarettes are NOT safer than unfiltered, and 42% think that cigarettes without chemical additives are NOT safer than those with additives.

## Prevalence and Correlates of Smoking

The prevalence of smoking in Suffolk County is 20.8%. Smoking is defined as having smoked 100 cigarettes or more in a lifetime (AQ) and smoking every day or some days (QB). It is 95% certain that the true prevalence of smoking in the county is between 19.2% and 22.4% based on the total sample screened of 2,463 individuals.<sup>1</sup> These numbers strongly suggest that the prevalence of smoking in Suffolk County is below the national average of 24.1%.<sup>2</sup>

The prevalence of smoking varies, however, by age, education level, gender, and employment status. There are large variations in smoking rates across age groups. Twenty-seven percent of young people aged between 18 and 25 are regular smokers. In contrast, only 10% of people 65 and older are regular smokers. The prevalence of smoking decreases steadily with age. This age trend is most pronounced among women as can be seen in Figure 1 below. Young women aged between 18 and 25 are the most likely to smoke of any age group with 37% reporting that they smoke regularly. In contrast, only 17% of men in the same age group are regular smokers.

**Figure 1**  
**Percent of Regular Smokers by Age and Gender**



This difference is statistically significant and is the largest gender difference observed across all age groups.<sup>3</sup> Smoking declines rapidly among women with age; the decline is less

<sup>1</sup> The confidence interval is calculated without correcting for the differential selection of zero and 1-plus telephone blocks. When this adjustment is conducted using stata, the confidence interval is widened to 18.8% -- 22.8%, reflecting a design effect of 1.62. This adjustment is suspect, however, because only 5 individuals were interviewed in 0 blocks.

<sup>2</sup> [www.cdc.gov/tobacco/research.data](http://www.cdc.gov/tobacco/research.data)

<sup>3</sup> The effects of all demographic and background variables on smoking, including the interaction between age and gender, is tested in a logit analysis of smoking; other significant differences in the incidence of smoking between

precipitous among men. Overall, however, there is no significant net difference in the prevalence of smoking between women (20.6%) and men (21.7%).

Education reduces the incidence of smoking but only among those who have completed a college degree. As seen below in Table 1, the prevalence of smoking is much lower among individuals with a college degree or post graduate education. Only 13% of these individuals smoke on a regular basis. In contrast 20% or more of those with less than a college degree smoke regularly.

**Table 1**  
**Prevalence of Smoking by Education**

	<i>Non-smoker</i>	<i>Smoker</i>
<i>High school or less</i>	79.3%	20.7%
<i>High school</i>	73.4%	26.6%
<i>Some college</i>	74.6%	25.4%
<i>College or beyond</i>	86.8%	13.3%

Employment status also influences smoking behavior with employed individuals being more inclined to smoke than homemakers, students, and retirees, holding age constant. This difference is slightly more pronounced among women than men. Twenty-four percent of employed women smoke compared to only 16% of non-working women, a significant difference. Among men, the difference in smoking prevalence is 22% among workers compared to 17% among non-workers, a difference that does not reach significance. Unemployed individuals – people who report that they are currently out of work or unemployed (Q33) –also smoke at significantly higher than average rates. Fully 28% of those who are unemployed smoke.

The one other factor that has a significant impact on current smoking is having had a parent who smoked. Almost three-quarters of all respondents (72%) had at least one parent who smoked (DEMO3) and these individuals are more likely to smoke (24%) than those whose parents had never smoked (14%), holding other demographic factors such as age, gender, and education constant.

## **Attitudes and Behavior of Smokers**

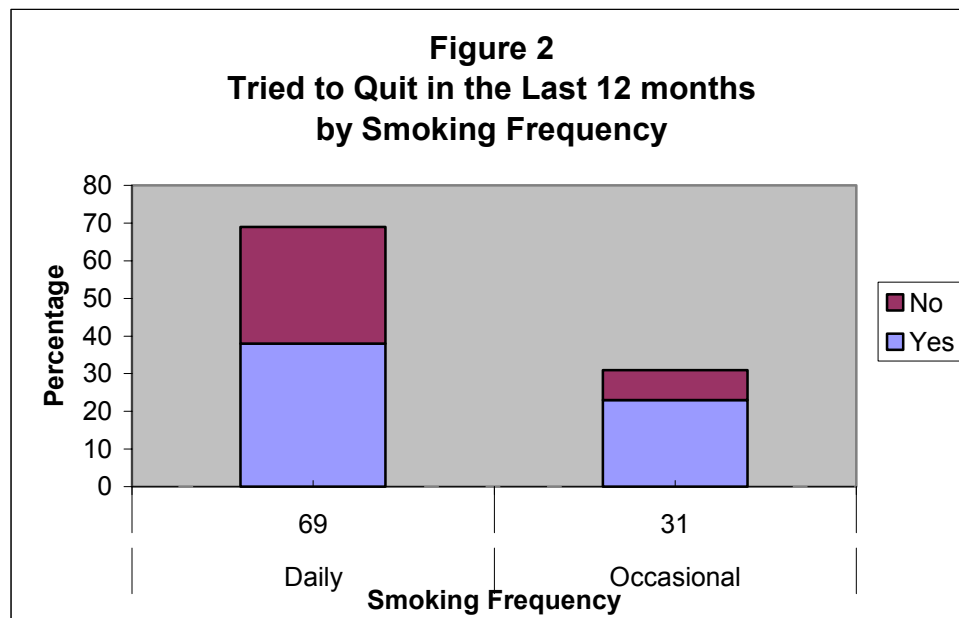
### *Smoking Behavior*

Just over two-thirds (69%) of all smokers reported smoking daily in the past 30 days; a minority of smokers (31%) said they had smoked some days but not every day in that period (Q1). Among daily smokers, the median number of cigarettes smoked a day is just under 20 – 48% said they had smoked 18 or fewer cigarettes a day while 51.5% said they had smoked 20 or more (Q2). In contrast, smokers who do not smoke every day also smoke less heavily. Occasional smokers had smoked a median number of between 2 and 3 cigarettes a day in the last 30 days (Q3). Nonetheless, there were a few individuals among both regular and

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specific subgroups, including gender differences in smoking among the youngest age group, are tested using a t-test. All tests of significance are two-tailed at the 95% confidence interval and are corrected in stata for the disproportionate stratification of groups by smoking status.

occasional smokers who had smoked an average of 2 packs of cigarettes a day or more in the last month. Occasional smokers are more serious about quitting than daily smokers. A significantly higher percentage of occasional smokers (74%) than daily smokers (55%) had stopped smoking for 24 hours in the last 12 months. This difference is depicted in Figure 2.



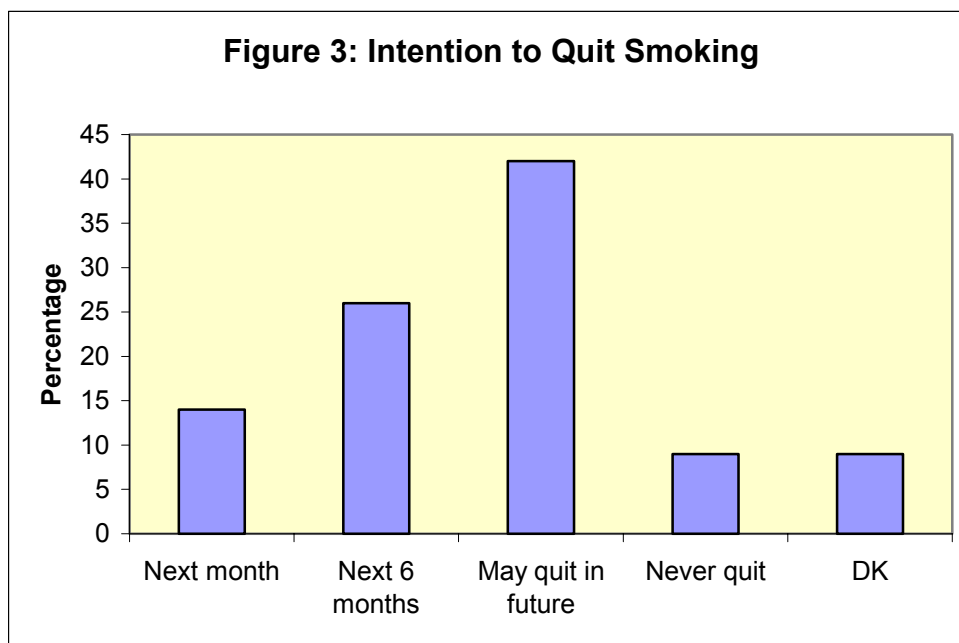
The majority of smokers surveyed began smoking in their teens. The median age at which smokers tried their first cigarette is between 14 and 15. It takes several additional years for smokers to begin smoking regularly. Only 2% of smokers surveyed started smoking regularly at the age of 12 or younger; an additional 36% began smoking between the ages of 13 and 16; 30% began between the ages of 17 and 19; and an additional 25% began smoking regularly after the age of 19. The median age at which smokers began to smoke regularly is 17. When asked about what influenced them to begin smoking, the most common answer is friends or peer pressure (54%).

#### *Perceived Impact of Smoking on Others*

Smokers with children are generally optimistic about the impact of their smoking on their children despite findings reported earlier that the children of smokers are more likely to smoke than the children of non-smokers. Forty-six percent of smokers had children under the age of 18 living with them. When asked about the impact of their smoking on their children, a higher percent of smokers thought their children would be less likely to smoke (40%) than the children of non-smokers compared to 28% who thought their children would be more likely to smoke; an additional 26% of smokers thought their smoking would have no effect on their children's future smoking behavior (Q8). The non-smoking spouses/partners of smokers were similarly sanguine about the impact of their partner's smoking on their children. Fifty-one percent thought their children would be less likely to smoke and only 22% thought they would be more likely to smoke than the children of non-smokers (Q1\_SP).

### *Quitting Intention and Behavior*

The majority of smokers would like to stop smoking. Fully 82% of all smokers surveyed said they planned to quit in the future if not in the next 6 months (Q18); 40% planned to quit in the next 6 months or sooner. Fifty-seven percent had stopped smoking for at least 24 hours in the last 12 months with the intention of quitting (Q9). And of the 38% of smokers who said they had not stopped for 24 hours in the last 12 months, 68% said they had seriously considered quitting (Q10). Together, this amounts to 83% of all smokers who tried to quit in the last 12 months or seriously thought of quitting at some point.



Of those smokers who had stopped smoking for 24 hours or more in the last 12 months, the median number of times they had tried to give up was between 1 and 2, although a small percentage (12.9%) had tried to quit 5 times or more (Q11). When smokers tried to quit, the median time they had refrained from smoking was between 1 and 2 weeks (Q12). A small percentage had quit for a year or longer (7.5%) before returning to regular smoking. When the impact of several socio-demographic factors on quitting behavior was assessed simultaneously, it was clear that black smokers and those with children under the age of 18 were significantly more likely to have tried to quit in the last year than other smokers. The impact of race and parenthood on quitting behavior is presented in Table 2. Other factors such as education, age, and gender were unrelated to having tried to quit in the last year.<sup>4</sup>

<sup>4</sup> Logit analyses were run to assess the effects of background factors on quitting behavior. Standard errors in these analyses were corrected for the design effects that arise from the differential selection of smokers and non-smokers. These analyses are confined to smokers.



**Table 2**  
**Percent of Smokers Trying to Quit in Last Year**  
**By Race and Parenthood Status**

	<i><b>Tried to Quit</b></i>
<i><b>White</b></i>	58%
<i><b>Black</b></i>	85%
<i><b>Hispanic</b></i>	73%
<i><b>At least 1 child &lt; 18 at home</b></i>	66%
<i><b>No children &lt; 18</b></i>	54%

Clearly the majority of smokers would like to give up smoking even if they have not tried to quit in the last year. The bigger problem seems to be that smokers' efforts are generally unsuccessful. The majority of smokers who try to quit do so without any external help. Seventy-eight percent of those who had tried to quit in the last 12 months had done so without any assistance (Q13). Only 18% report having tried a nicotine substitute. Of those who had tried a nicotine substitute, most had tried a nicotine patch (61%), followed by nicotine gum (15%), and a nicotine inhaler (4%). Zyban was the most popular prescription medication (31%) among those who had sought assistance; an additional 9% had tried a medication other than Zyban.

A handful of smokers who had tried to quit in the last year sought counseling advice or turned to self-help materials (10%). Of those who sought counseling or self-help, the majority tried self-help (66%) followed by group counseling (47%), other methods including hypnosis (31%), and one-on-one counseling (19%). But these numbers are small overall. In general, most smokers try to quit without either chemical or therapeutic assistance of any kind.

A majority of non-smokers with a smoking spouse/partner also reported that their spouse or partner had tried to quit or was planning to. Seventy-one percent of non-smokers reported that their smoking spouse/partner had made a serious attempt to quit in the last 12 months (Q23\_SP) and 67% said their spouse/partner planned to quit at some point in the future. Moreover, 79% of non-smokers said that it was very important to them that their spouse/partner quit smoking (Q27\_SP).

#### *Role of Health Professionals*

Health professionals have considerable access to smokers and could provide more concrete assistance to smokers who wish to quit. The majority of smokers (85%) had seen a health professional in the last 12 months (Q19). And in a majority of cases (55%), smokers were told by their health professional to quit smoking, although a sizeable minority of smokers (45%) did not receive this advice (Q20). But only 14% of all smokers and 15% of those who had seen a health professional in the last 12 months were given concrete advice by their health professional about a smoking cessation program. And of those who were advised to stop smoking, only 39% actually tried to quit.

### Awareness of Smoking Cessation Programs

Few smokers have tried a smoking cessation program and very few smokers have received information about such programs from their doctors and other health professionals. Suffolk county's program – Learn to Be Tobacco Free –attained a modest level of recognition among survey respondents. Twelve percent said they had heard of the program (Q28). Awareness was higher among smokers, 17% of whom said they had heard about the program compared to 11% of non-smokers, a significant difference.<sup>5</sup> Of those respondents who had heard of the Suffolk county program, most said they had seen it in a newspaper ad (41%), heard of it at work (24%), through family or friends (19%), at school (16%), or in the media (11%) as seen in Table 3 below (Q29). In addition, of those who had heard about the program, a handful of respondents had participated (4%), although this constitutes only 3 or 0.6% of smokers overall (Q30).

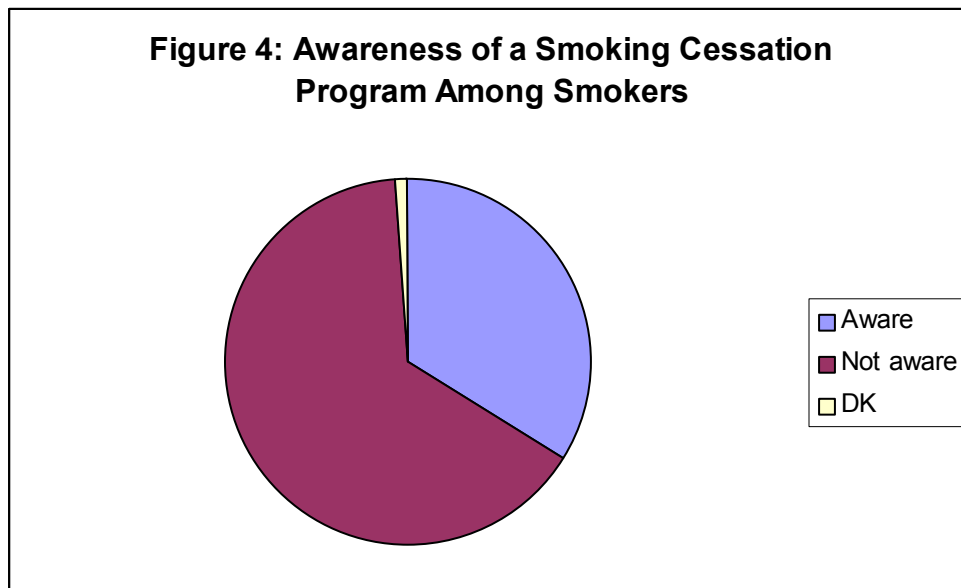
**Table 3**  
**Awareness of “Learn to be Tobacco Free”**  
**And Source of Information about the Program**

	<i>Not Heard of Program</i>	<i>Heard of Program</i>
<b><i>Suffolk County Residents</i></b>	87.8%	11.9%
<b><i>Source of Information:</i></b>		
<i>Newspaper Ad</i>		41%
<i>At/through work</i>		11%
<i>Doctor</i>		10%
<i>Friend/family</i>		8%
<i>School</i>		7%
<i>Radio/TV/Other media</i>		5%

Seventeen percent of all respondents had heard of other smoking cessation programs (Q31). The most commonly mentioned programs were the American Cancer Smokeout, the Green seminar, programs offered by hospitals and clinics, and general hypnosis. Few programs were mentioned specifically by name. As with Suffolk county's program, smokers were significantly more aware of other smoking cessation programs than were non-smokers (23% of smokers v. 15% of non-smokers), although awareness levels still remain quite low among smokers.

When the Suffolk county program and other smoking cessation programs are considered together, 25% of all county residents are aware of at least one smoking cessation program. Among smokers, 34% are aware of at least one program compared to 22% of non-smokers. Smokers' level of awareness of smoking cessation programs is depicted in Figure 4.

<sup>5</sup> This difference is significant according to a chi-squared test corrected in stata for the design effects that arise from the differential selection of smokers and non-smokers.



## Second-Hand Smoke

### *Incidence of Second-Hand Smoke*

A majority of smokers and the smoking spouses/partners of non-smokers smoke inside their home, although there is a sizeable minority of smokers that do not. Overall, 56% of smokers, 53% of non-smokers with a smoking spouse/partner, and 12% of other non-smokers report that someone had smoked inside their house in the last 30 days (Q32). On the other hand, this means that 44% of smokers do not smoke inside at home. Among all smokers regardless of their marital status, 24% have a spouse or partner who smokes. This number increases to a sizeable 46 % among married smokers. Not surprisingly, the incidence of indoor smoking at home is greatest in households where both adults smoke. Sixty-eight percent of married smokers with a smoking spouse/partner report that someone had smoked inside in the last 30 days; this is significantly higher than the incidence of indoor smoking among smokers with a non-smoking spouse/partner (46%).

Among smokers the presence of children under 18 depresses indoor smoking slightly. Sixty percent of smokers without children under 18 smoke at home compared to 52% of those with young children, although this difference does not reach statistical significance. There is a bigger difference in households in which there is a non-smoker with a smoking spouse/partner. Sixty -seven percent of non-smokers without children under 18 report that their spouse/partner smokes at home compared to only 42% of non-smokers with a smoking spouse/partner and children under 18. This difference is statistically significant.

Smokers are more likely to smoke while driving than to smoke inside the house. Sixty-nine percent of smokers said that someone had smoked in their car in the last 30 days, compared to 42% of non-smokers with a smoking spouse/partner, and 9% of non-smokers (Q32a).

### *Smoking at Work*

Suffolk county residents report that there is relatively little smoking at their workplace. This goes hand-in-hand with pervasive anti-smoking policies. Twenty-percent of all workers report that someone had smoked in their work area in the last two weeks (Q37). This percentage was higher among smokers 30% of whom said someone had smoked in their work area in the last two weeks compared to only 18% of non-smokers. Overall, 80% of all workers, regardless of their smoking status, were aware of a smoking policy at their workplace (Q34).

Seventy-eight percent of workers who knew of smoking policy at their workplace said that smoking is prohibited indoors and an additional 9% report that smoking is only allowed in some indoor areas. A small minority (10%) report that smoking is allowed in all indoor areas or there is no smoking policy. Smokers were somewhat less likely to report restrictive smoking policies at work. Seventy-two percent of smokers compared to 80% of non-smokers report that smoking is not allowed indoors at their workplace, a statistically significant difference. Moreover, 78% of all workers report that the smoking policy is very actively enforced at their workplace; an additional 9% report that it is somewhat actively enforced (Q36).

Workers themselves play a minor role in enforcing smoking policies at work. Fifteen percent of non-smokers and 8% of smokers had asked someone they work with not to smoke in the past 12 months (Q38). And 19% of smokers said a co-worker had asked them not to smoke at some point in the last year (Q39). Interpersonal requests to refrain from smoking are less common at work than outside of work, perhaps because of existing workplace smoking rules. Fully, 31% of non-smokers and 20% of smokers had asked someone other than a co-worker not to smoke in the past 12 months (Q40). In addition, 33% of smokers had been asked by someone other than a co-worker not to smoke in the past 12 months (Q41).

### *Knowledge of Effects of Second-Hand Smoke*

Suffolk county residents are generally aware of the adverse effects of second-hand smoke, although some consequences are better known than others. There is almost universal awareness that second-hand smoke can harm babies and children (96%; Q44), widespread knowledge that second-hand smoke can be harmful to adults (91%; Q42), somewhat lesser awareness that second-hand smoke can affect an unborn fetus (86%; Q45), and less awareness again that inhaling second hand smoke can cause lung cancer in a non-smoker (78%; Q43). Nonetheless, knowledge levels are generally high with 71% of all county residents correctly answering each of the 4 questions concerning the effects of second-hand smoke.

Smokers reported that they were less aware of the effects of second-hand smoke than were non-smokers. Only sixty-two percent of smokers compared to 74% of non-smokers answered all four questions about the health effects and dangers of second-hand smoke affirmatively, a significant difference. In addition, there was less awareness of the effects of second-hand

smoke among men and older people in multivariate analyses.<sup>6</sup> The factors that correlate with knowledge of the consequences of second-hand smoke are presented in Table 4 below.

**Table 4**  
**Knowledge of the Consequences of Second-Hand Smoke:**  
**Average Number of Affirmative Responses About the Health Effects**  
**of Second-Hand Smoke out of a Total of 4**

	<i>Number Affirmative Responses</i>
<i>All Suffolk County Residents</i>	3.51
<i>SubGroups of Residents:</i>	
<i>Smokers</i>	3.32
<i>Non-smokers</i>	3.56
<i>18-25</i>	3.71
<i>26-35</i>	3.67
<i>36-45</i>	3.61
<i>46-55</i>	3.39
<i>56-65</i>	3.42
<i>65+</i>	3.12
<i>Men</i>	3.44
<i>Women</i>	3.58

### **Attitudes Toward Tobacco-Related Public Policies**

There is widespread support in Suffolk county for government policies designed to reduce the incidence of smoking. Only a handful of residents think smoking should be allowed without restriction in public places (3%; Q47). The remainder are split between completely banning smoking in public places (37%) and allowing it in areas set aside for smoking (59%; Q46). There is consensus on the need for increased penalties against merchants who sell cigarettes to minors with 80% of all county residents strongly in favor of this concept (Q50). There is also consistent support for the use of tobacco settlement money to fund anti-smoking programs with 64% strongly in favor (Q49). Sixty-six percent of all residents think laws that restrict smoking in public places should be strongly enforced; another 24% think they should be enforced somewhat strictly (Q47). Residents are somewhat less supportive of increased taxes on cigarettes. Forty-seven percent strongly favor increased taxes and 16% favor it somewhat (Q48).

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<sup>6</sup> The impact of a range of socio-demographic factors on knowledge of second-hand smoke was assessed with ordered probit analyses. As in previous analyses, stata was used to correct standard errors for the differential selection of respondents by smoking status.

Not surprisingly, smokers are significantly less likely than non-smokers to support such policies. The greatest divergence is observed on support for increased taxes on cigarettes. Fifty-five percent of non-smokers strongly favor increased taxes and 18% somewhat favor this. In contrast, only 27% of smokers strongly or somewhat favor increased taxes while 55% are strongly opposed. Significant but less pronounced differences between smokers and non-smokers are observed on banning smoking in public places, the strength with which smoking policies should be enforced, the use of tobacco settlement money, and penalties against merchants selling cigarettes to minors.

#### *Children's Access to Tobacco Products*

There is widespread support for policies designed to restrict children's access to tobacco products. Eighty-one percent of all residents strongly favor federal government restrictions on the sale of tobacco to children (Q51), 80% strongly favor increased local government restrictions (Q52), and 89% think that laws preventing the sale of cigarettes to minors should be very strictly enforced (Q53).

Local residents are more divided over what works in discouraging children from smoking. A majority think that keeping cigarettes behind the counter or in locked cabinets has a great deal (37%) or some (25%) influence in discouraging minors from purchasing cigarettes (Q54). Views are more mixed on the placement and impact of ads. Forty-four percent think the placement of tobacco advertising near candy or toys has a great deal of influence in encouraging a child to buy cigarettes. But there are also 22% who think it has little or no impact (Q55). And 45% think that tobacco ads have a great deal of influence in encouraging young people to begin smoking while an additional 32% think it has some effect.

There is agreement that a range of actions could help discourage smoking among young people, as seen below in Table 5, although no one strategy is seen as extremely effective. There is widespread agreement (65%) that having contact with an adult who has quit would encourage children not to smoke. Respondents were asked about the effectiveness of a series of actions that might discourage children from smoking and rated laws that prevent smoking in public places as most effective (Q62), followed by quality education programs (Q57), anti-smoking ads (Q61), stricter FDA regulation of tobacco (Q58), banning ads in stores and at events (Q60), and raising the price of cigarettes (Q59).

**Table 5**  
**Perceived Effectiveness of Policies in Discouraging Children from Smoking**

	<i>Very Effective</i>	<i>Somewhat Effective</i>	<i>Not very Effective</i>	<i>Not at all Effective</i>
<i>Prohibit in public places</i>	41	41	10	7
<i>Quality education programs</i>	38	47	8	5
<i>Anti-smoking ads</i>	35	49	7	7
<i>Stricter FDA regulation</i>	33	47	9	7
<i>Banning ads in stores/events</i>	32	43	12	11
<i>Raising the price of cigarettes</i>	36	34	13	16

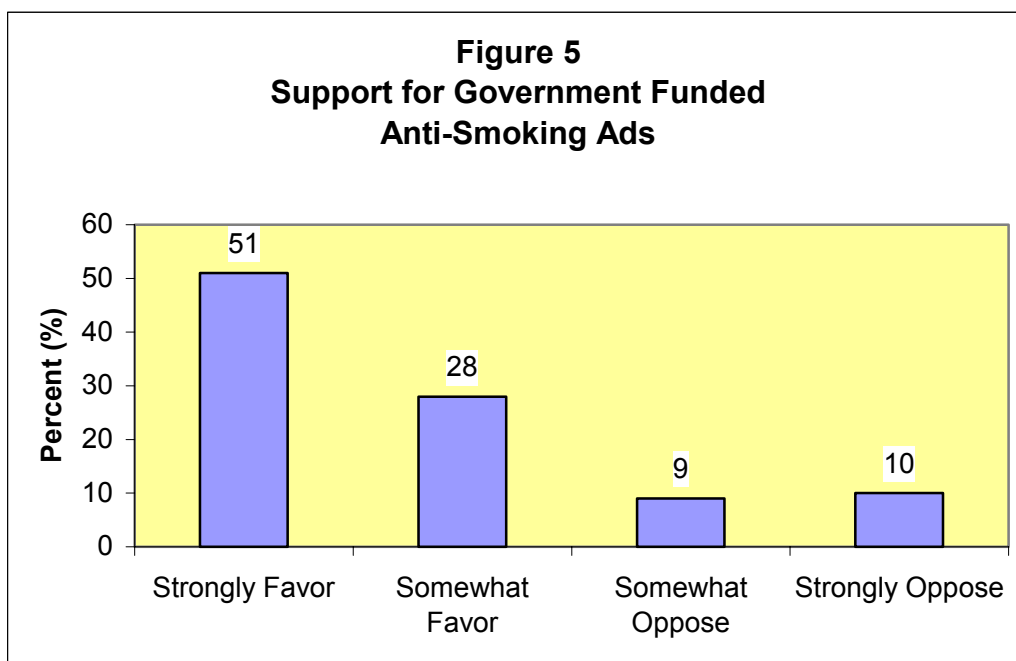
## Tobacco Advertising

### *Exposure to Tobacco Advertising*

A majority (53%) of county residents had seen or heard advertising for cigarettes or cigars in the last week. Thirty-six percent had been exposed to an ad for cigarettes and the same percentage had been exposed to an ad for cigars. A majority think advertising for cigarettes and other tobacco products should be allowed only in some media (35%) or banned in all media (53%; Q66).

### *Anti-Smoking Advertisements*

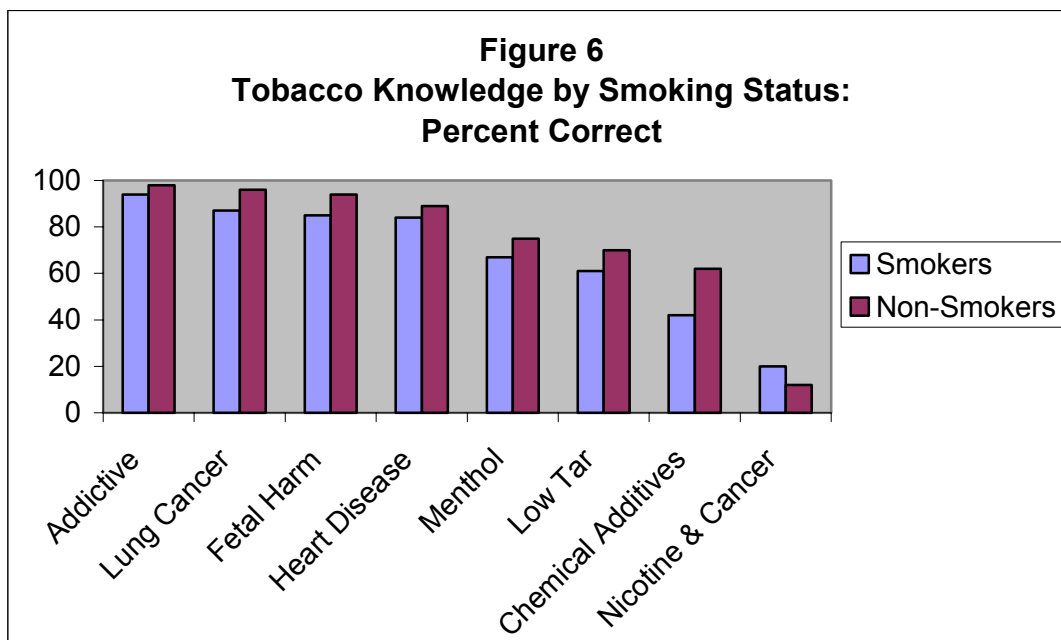
The majority of local residents not only oppose cigarette advertising, they also support government funded anti-smoking advertisement campaigns. A majority were in favor of such a campaign with 51% strongly in favor and 28% somewhat in favor (Q67). This support is depicted in Figure 5. In addition, local residents are familiar with the nature of anti-smoking ads. Seventy-nine percent had seen a commercial against smoking on TV in the last month (Q68). Indeed, over a third (36%) had seen 5 or more such commercials in the last month. Exposure to anti-smoking ads on the radio was somewhat lower with 42% having heard a radio commercial in the last month.



## General Knowledge of Smoking and Cigarettes

Knowledge of cigarette safety and the general consequences of smoking was mixed. Suffolk county residents reported a high degree of knowledge about the addictive nature of smoking and its major health consequences. The percentage of residents who answered correctly each of nine questions about cigarettes and smoking are presented in Figure 6 separately among

smokers and non-smokers. As can be seen in this figure, almost everyone knows that cigarettes are addictive but very few people know that nicotine does not cause cancer. Individuals are also confused about the relative safety of menthol, low tar, and filter cigarettes and those without chemical additives. Knowledge levels are generally lower among smokers than among non-smokers with one exception: Smokers are somewhat more likely than non-smokers to know that nicotine is not a carcinogen.



Suffolk county residents in the survey correctly answered between 5 and 6 out of a possible total of 9 questions on smoking and tobacco. No-one got all 9 questions correct and there was a small percentage (4.6%) who got two or fewer questions correct. Further analyses revealed that only two background factors were significantly related to tobacco knowledge.<sup>7</sup> As seen in Figure 6, smokers were less knowledgeable about cigarettes and tobacco and older people knew less than the younger age groups. In the case of smokers, they did not always give an incorrect answer but were in fact somewhat more likely than non-smokers to say they did not know the answer. These differences are presented in Table 6. There were no differences in smoking knowledge between men and women, people of different racial backgrounds, employment status, or educational background.

<sup>7</sup> This finding is based on multivariate regression analysis in which smoking knowledge was regressed on a series of socio-demographic factors with standard errors corrected in Stata for the survey design.



**Table 6**  
**General Tobacco Knowledge:**  
**Average Number of Correct Responses out of a Total of 9**

	<i>Number Correct</i>
<i>All Suffolk County Residents</i>	5.40
<i>SubGroups of Residents:</i>	
<i>Smokers</i>	4.86
<i>Non-smokers</i>	5.54
<i>18-25</i>	5.73
<i>26-35</i>	5.34
<i>36-45</i>	5.54
<i>46-55</i>	5.32
<i>56-65</i>	5.56
<i>65+</i>	5.05

## Methodology

Telephone interviews were conducted among a random sample of adults (age 18 and older) within Suffolk County from April 2, 2001 till June 27, 2001. All interviews were conducted by the Center for Survey Research at the State University of New York at Stony Brook. Respondents were screened for their smoking status – smoker, non-smoker, or a non-smoker with a smoking spouse/partner. As a quality control measure, up to 15 callbacks were made per number and an attempt was made to convert all initial refusals, except the most adamant. Over 80% of all interviews were validated by a supervisor after the interview had been completed.

### *Sample Design*

A list-assisted method of random-digit-dialing (RDD) was used to obtain phone numbers. Numbers were purchased from Survey Sampling Inc. (for further details on list-assisted RDD samples see Levy and Lemeshow 1999).<sup>8</sup> Under the list-assisted sampling method, random samples of telephone numbers are selected from blocks of 100 telephone numbers that are known to contain at least one *listed* residential telephone number. These blocks with at least one residential telephone number are referred to as “1-plus” working blocks. According to Survey Sampling Inc. roughly 40% of telephone numbers in 1-plus working blocks are residences, although percentages are as high as 54% when the blocks are screened for non-working and business numbers (Brick, Waksberg, Kulp and Starer 1995).<sup>9</sup> A sample design based on 1-plus

<sup>8</sup> Levy, P.S. and Lemeshow, S. (1999). *Sampling of Populations: Methods and Applications*. John Wiley & Sons, Inc.

<sup>9</sup> Brick, J.M., Waksberg, J., Kulp, D, and Starer A. (1995) “Bias in List-Assisted Telephone Samples” *Public Opinion Quarterly*, 59: 218-235.

working blocks is commonly used in health surveys, including research in California by Pearce and colleagues (1998) on smoking attitudes and behavior.<sup>10</sup>

The exclusive use of 1-plus blocks omits unlisted residential telephone numbers in blocks without a listed residential number. As noted by Brick et al. (1995) this would result in the exclusion of roughly 4% of all telephone households nationally and raise a concern about possible bias in the sample. Brick et al. (1995) investigated possible bias in the use of 1-plus sample designs but found very few differences nationally between households in zero and 1-plus blocks on a range of demographic characteristics and indicators of involvement in government programs. They conclude that “the truncated list-assisted RDD sampling method is efficient and that the estimates are not subject to important coverage bias (p. 233).” Nonetheless, the exclusion of zero blocks introduces possible bias into the survey design. To eliminate that possible bias, we include zero blocks at a ratio of roughly 1 zero block number to every 6 1-plus numbers. This design involves disproportionate stratification that is compensated for by the addition of weights for the zero and 1-plus blocks.

A total sample of 10,139 numbers was drawn from 1-plus and 4,361 from 0 blocks. The resulting number of total completed interviews and the number of interviews in each smoking-status category is listed below.

	<u>Total</u>
Screened for prevalence	2463
Total Non-smokers Interviewed	1,474
(Non-smoker with smoking spouse)	(176)
(All other)	(1,298)
Smokers Interviewed	511
Total interviews	1,985

#### *Response Rate*

The response rate overall was between 45% and 46%. The difference depends on whether we exclude all numbers at which there was no answer or a busy signal on all 15 calls (46%) or take 25% of these numbers (45%), a percentage derived from research by Westat (Pearce et al. 1998). The response rate is calculated by dividing the total number of completed interviews (1985) and screened non-smokers (481) by all completes, screened non-smokers, partial interviews, refusals, no answers, answering machines, unfinished callbacks, and individuals with language problems. The cooperation rate (the ratio of completes and screened to completes, screened and refusals) was 59%).

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<sup>10</sup> Pierce, J. T., Berry C.C, Gilpin, E. A., Rosbrook, B, White, M.M., Maklan, D.M., Croos, J., and Machado, J. (1998). *Technical Report on Analytic Methods and Approaches Used in the 1996 California Tobacco Survey Analysis*. University of California, San Diego and Westat, Inc.

## ***Weights***

The data is weighted to compensate for variable probabilities of inclusion in the sample. The weighting is done in several different stages. These stages include determining the overall probabilities of selection and the calculation of post-stratification weights to compensate for non-response and non-coverage. In addition to a single variable providing an overall weight which combines the various weighting factors detailed below, the data also includes a separate intermediate weight for each weighting factor.

### *Person-Level Weights*

*Block Weights(b).* The block weight compensates for the differential selection of telephone numbers from 1-plus and 0 blocks. The ratio of selection was 1 number from each zero block for every 6.07 numbers in 1-plus blocks. Thus 1-plus blocks are given a weight of 1 and zero blocks are given a weight of 6.07.

*Household Weights (t).* Households increasingly have more than one residential telephone line. To compensate for the increased probability of inclusion of households that have more than one residential phone line, we assign a weight  $t$  of .5 to any household that has more than one residential phone line and a weight of 1 to households with one residential phone line (see Pierce et al. 1998). Thus, households with one residential phone line receive a weight of  $b$  (the base weight)  $\times t = b$ , households with more than one line receive a weight of  $b \times t = .5 b$ . Information about the number of phone lines in the household is based on questions DEMO1 and DEMO2 in the survey.

*Person-level weights (h, s).* We assess the number of adults 18 and older living in the household (DEMO4) and weight respondents according to their chance of inclusion. Individuals in a household with more than one adult have a lesser chance of inclusion than those with only one adult. We weight individuals according to the inverse of the probability of inclusion. In this instance, the probability of inclusion is  $1/h$  where  $h$  is the number of adults in the household. The weighting factor is  $h$  [ $=1/(1/h)$ ]. Thus, an individual living alone in a household with one residential telephone line would receive a weight of  $b \times t \times h = b$ ; an individual living in a household with one residential line and another adult would receive a weight of  $b \times t \times h = 2b$ .

Individuals were selected at different rates once they had been screened for smoking status. The probability of inclusion based on one's smoking status is as follows:

*Smokers* – sampling rate=1

*Non-smokers, single or non-smoking spouse/partner* – sampling rate= .75

*Non-smokers with a smoking spouse/partner* – sampling rate=1

The weight  $s$  compensates for the differential probability of inclusion based on one's smoking status and is the inverse of the sampling rates above. Thus the combined person level weight is  $h \times s \times t \times b$ .

### *Post-stratification weights*

Suffolk county demographic statistics were used to develop post-stratification weights. Post-stratification factors include age and gender. The true prevalence of each demographic grouping in Suffolk county was taken from the 1998 Current Population Survey (CPS). These post-

stratification weights simultaneously compensate for the households that are not covered in the sampling frame (non-coverage) and differential rates of survey participation (non-response).

### ***Analyses and Correction for Sample Design***

All analyses were conducted in Stata and all standard errors and confidence intervals were corrected for the design effect due to the disproportionate stratification by smoking status. The design correction does not compensate for the disproportionate stratification of 1-plus and zero blocks because only 5 individuals were interviewed in 0 blocks making it difficult to calculate variance estimates in the combined smoking status and block strata.

The overall design effect for the differential selection by smoking status is 1.5 for a point estimate of 50%. The associated margin of error is 2.7, resulting in a confidence interval of 47.3 to 52.7. The table below presents the sizes of each of the groups to be analyzed, as well as the sampling error at the 95% confidence level associated with a point estimate of 50%. Standard errors are inflated to accommodate the average design effect of 1.5 (deff) caused by disproportionate stratification and weighting. Standard errors have been inflated by a factor of 1.22 ( $\text{deft} = \sqrt{\text{deff}}$ ) (see Groves, 1989).<sup>11</sup>

		<b>Margin of error (+ pts.)</b>
<i>Group</i>	<u>N</u>	<u>Within sample</u>
Total screened	2,463	2.4
Full random interviews	1,985	2.7
Non-smokers	1,474	3.1
Smokers (including oversample)	511	5.3
Non-smoker with Smoker Spouse/Partner	176	9.0

All findings listed as significant in this report were based on standard errors corrected for the differential selection of respondents by smoking status and the use of weights using Stata's survey design correction procedures. Multivariate analyses included multivariate logit, ordered probit, and regression. The specific use of each procedure is noted in the body of the report and analytical output can be furnished on request. The significance of bivariate differences in contingency tables is tested with Pearson chi-squared statistic of independence corrected for the survey design effects.

<sup>11</sup> Groves, Robert M. 1989. *Survey Errors and Survey Costs*. New York: Wiley